BOGEN®
A DIVISION OF LEAR SIEGLER, INC.

TELEPHONE
INTERCOM SYSTEMS

SERIES TIS TELEPHONES with PRS-10 POWER SUPPLY

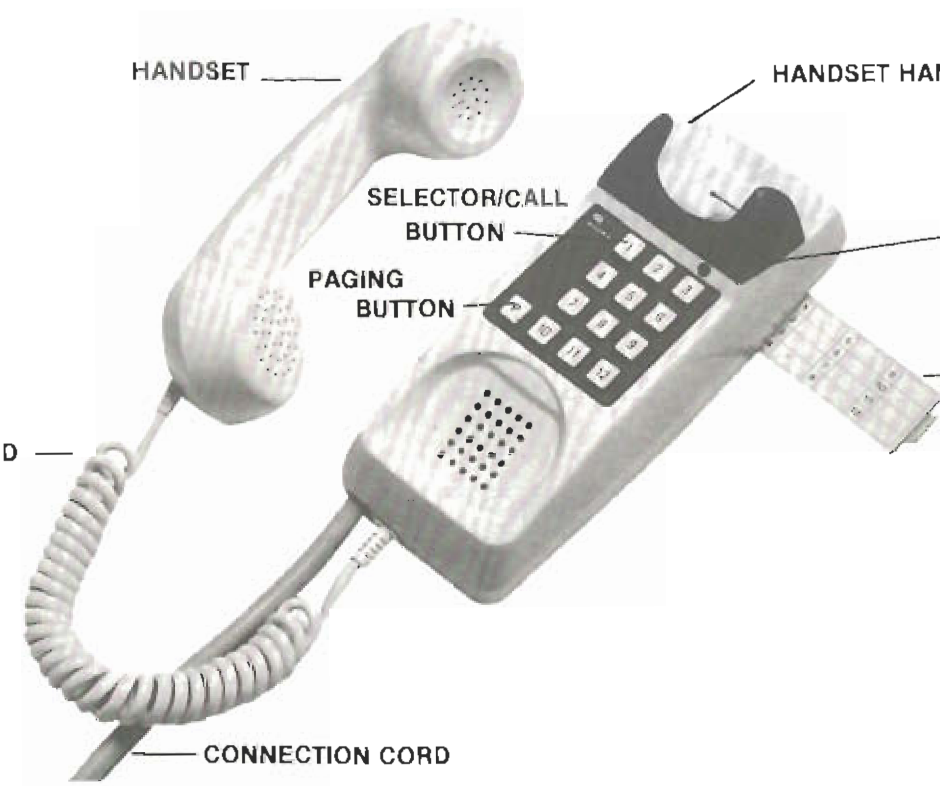


Figure 1 — Bogen-Phone Series TIS Intercom

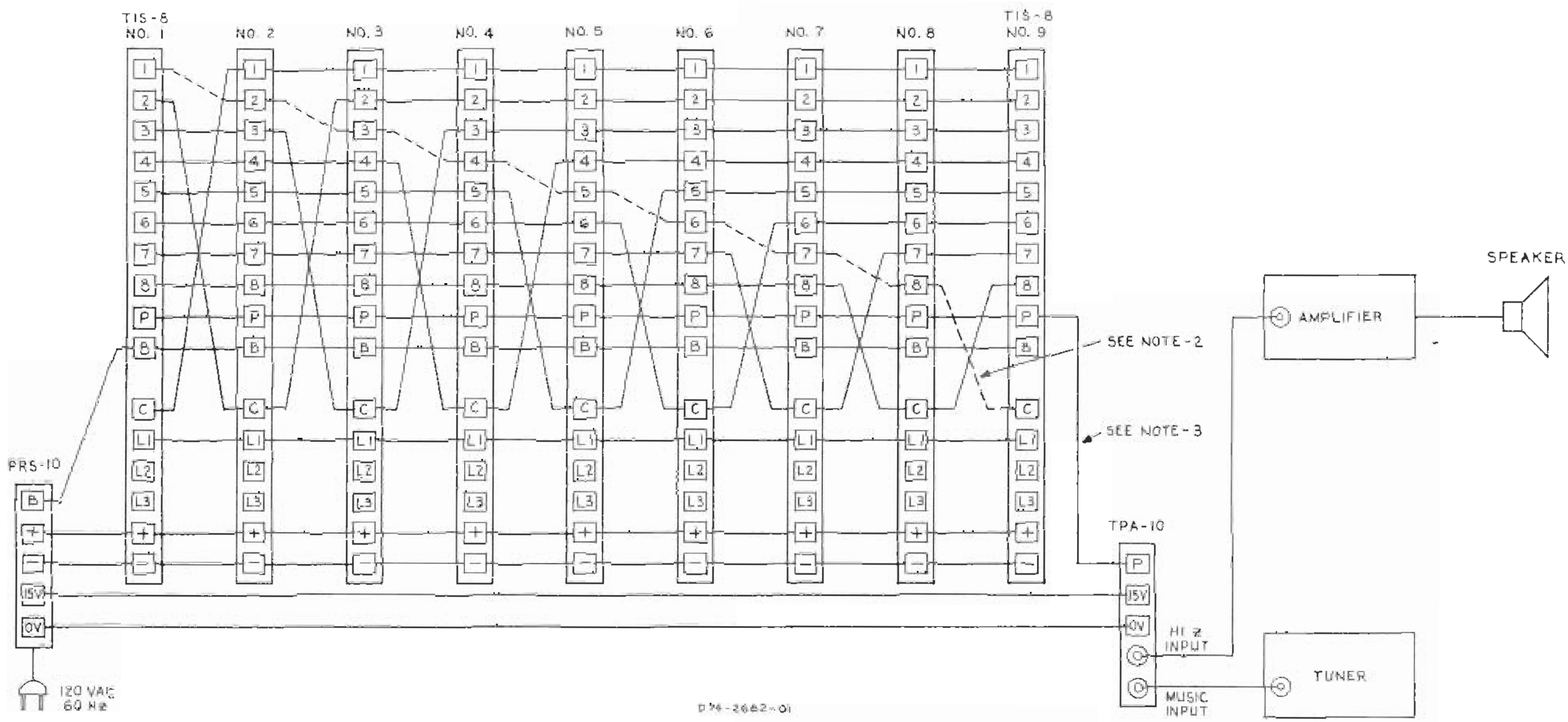
DESCRIPTION

The Series TIS Bogen-Phone Intercoms provide a common-talk line with selective ring, two-way, or conference call operation and paging or two-way communication through a public address system when equipped with appropriate Bogen accessories. An LED "in use" indicator on each telephone glows red when a conversation is in progress.

Telephones can be desk, counter, or wall mounted according to the user's needs. A seven-foot plastic jacketed cable connects the junction box to each telephone (except TIS-1) and a four-foot coiled snarl-proof cable connects the handset to the instrument base.

The Bogen series TIS Intercoms are designed for offices, factories, stores, laboratories, warehouses, residences and numerous other locations.

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NOTES:

1. THIS INTERCONNECTING DIAGRAM IS REPRESENTATIVE OF THE WIRING OF ANY TIS SYSTEM. WHEN USING TIS-4 TELEPHONE, TERMINALS 5 THRU 8 ARE NOT SHOWN IN THE TIS-4 JUNCTION BLOCK. WHEN USING TIS-12 TELEPHONE, TERMINALS 9 THRU 12 (NOT SHOWN ABOVE) ARE CONNECTED SIMILARLY AS TERMINALS 1 THRU 8.

2. DOTTED LINE REPRESENTS WIRING REQUIRED IF END STATION (9) IS USED IN SYSTEM HAVING LESS THEN THE MAXIMUM NUMBER OF STATIONS, THE END STATION CALL-IN LINE IS NOT REQUIRED.

3. "P" TERMINAL REPRESENTS PAGE LINE. REQUIRED ONLY WHEN PAGING ADAPTER IS USED.

Figure 2 — Master Stations with Paging Adapter — Interconnection Diagram

System Specifications

Power Source:	12 VDC (from PRS-10 Power Supply only) The PRS-10 operates from 120V, 60Hz.
Consumption:	0 mA (standby) 50 mA (max.) (talking)
Line impedance:	300 ohms
Allowable line resistance:	20 ohms (loop)
Call Tone:	Continuous electronic tone.
Dimensions (centimeters): (inches):	10.5 (H) x 9.5 (W) x 23.5 (D) 4.1 (H) x 3.75 (W) x 9.75 (D)
Weight Kilograms/lbs.	Approx. 1.1/2½ (TIS-1) 1½/3½ (all others)

There are four TIS telephones, as follows:

Model	*Number of Stations in Typical System	Number of Other Station That Can Be Selected
TIS-1	2	1
TIS-4	5	4
TIS-8	9	8
TIS-12	13	12

*The total number of telephones used is limited only by the calling capacity of each telephone, or a maximum of 60.

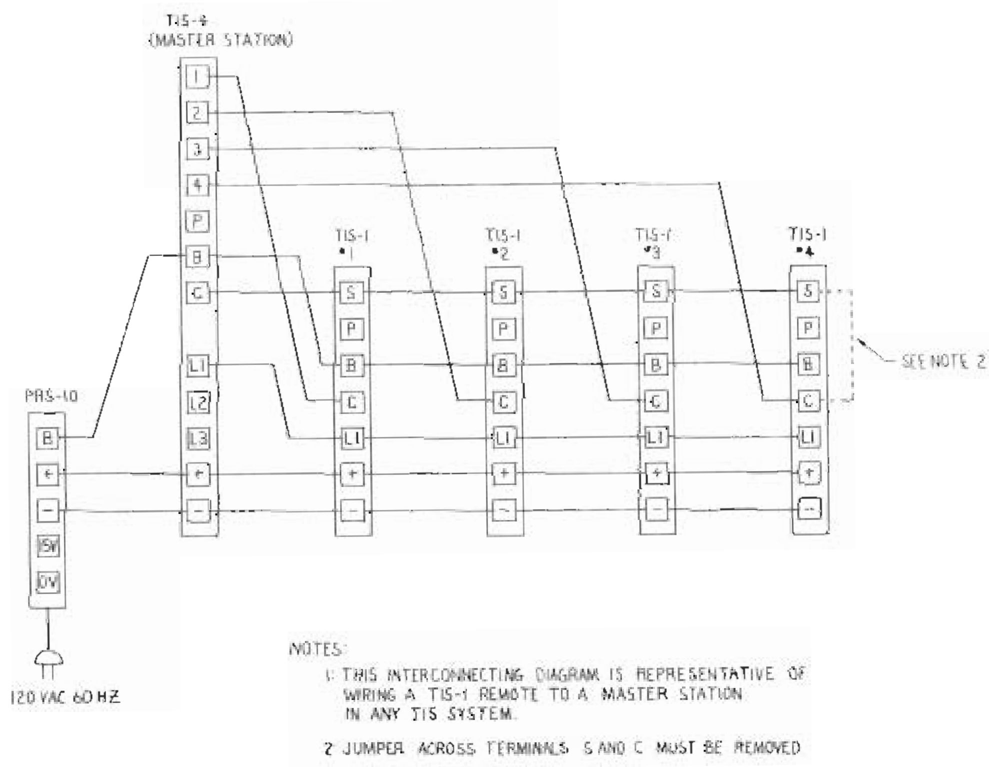


Figure 3 — Master — Remote Station — Interconnection Diagram

PREPARING FOR INSTALLATION

Carefully survey the areas in which the intercom system will be installed to determine the most efficient and economical cable routing and component locations including telephones, junction boxes and power supply. Wire gauges required for various communication distances are listed in table 1.

If paging will be used, decide on optimum locations for loudspeakers and a public address amplifier. Locate the power supply as close to the center of the system as possible in order to minimize volume differences between stations. Also, the power supply should be near one of the station junction boxes and a 120-volt, 60 Hz receptacle.

Draw a diagram of cabling routes and station and component locations. Identify each station with a numeral starting with No. 1, and assign a wire color. Have all persons concerned review this diagram, and resolve all suggestions and proposed changes before finalizing it. It is far less time-consuming to prepare and finalize a layout diagram than to correct errors and make changes to the system after it is installed. Also, system servicing is made easier if an accurate, complete wiring diagram is on file.

GENERAL PRECAUTIONS

Provide for future expansion and repairs by allowing slightly more cable length than is actually required. Use only BOGEN cable or exact equivalents. Do not use twisted pair cable. Cable should consist of unshielded insulated conductors totalling four more than the number of stations in the Typical All-Master system. If paging is used, five more conductors than the number of stations are required.

1. Be sure that you understand all of the instructions in this manual before starting the installation.
2. Do not expose the equipment to the weather or to excessive moisture.
3. Except for the power supply AC power cord plug, do not connect wires to AC power sources.
4. Do not reverse power supply connections.
5. Do not alter component wiring.
6. Do not drive staples or tacks through cables or hammer cables.
7. Route cables away from excessive heat and avoid sharp bends. In damp interior areas and for underground runs, use conduit. For overhead outdoor runs, use weatherproof cable, and provide support.

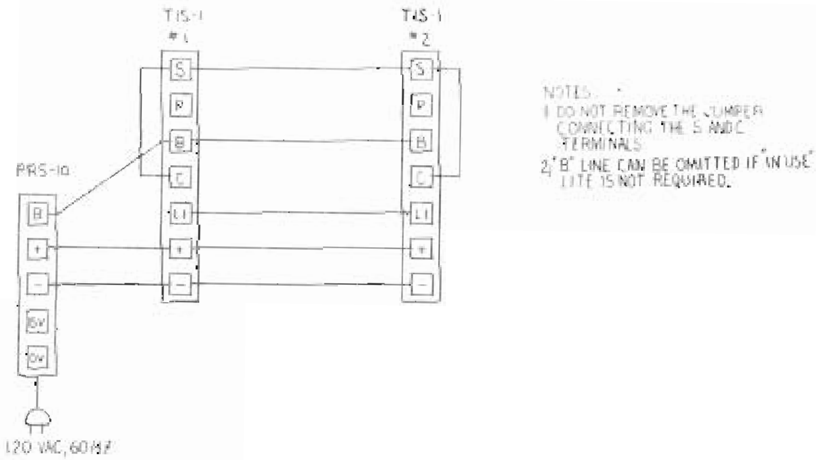


Figure 4 — Two TIS-1 Stations Ring and Talk -- Interconnection Diagram

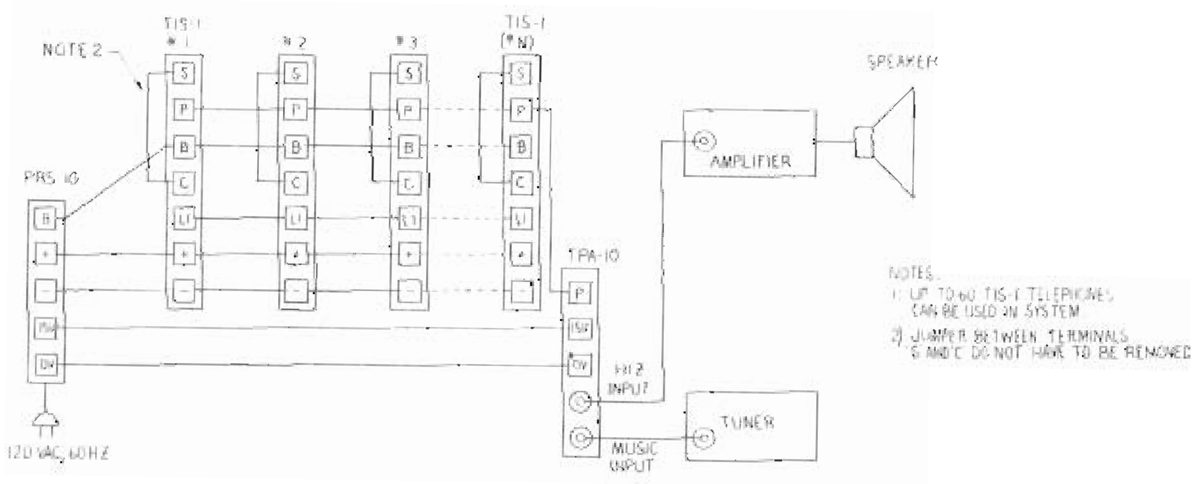


Figure 5 — Multiple TIS-1 with TPA-10 Page Adapter

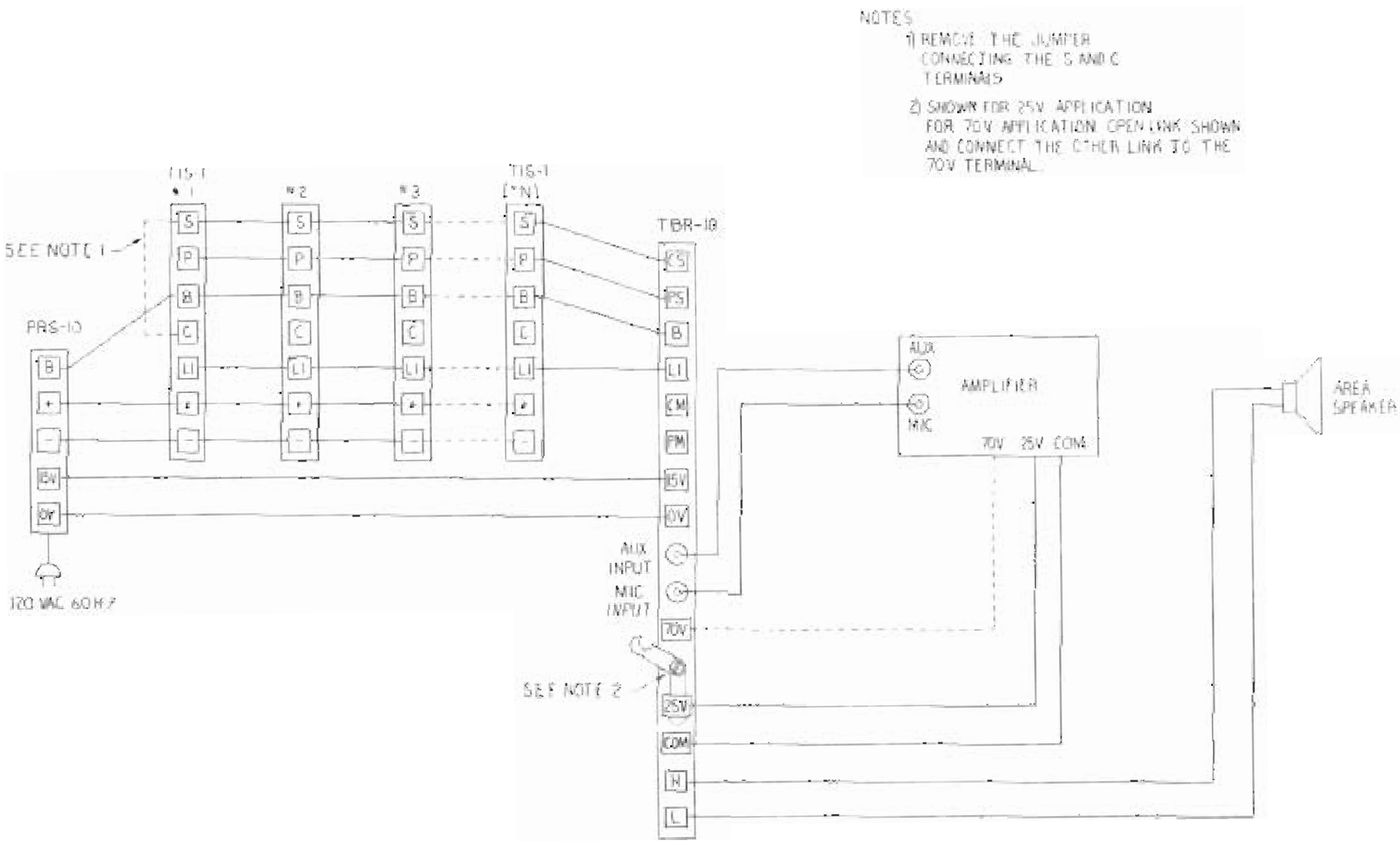


Figure 6 — Multiple TIS-1 Stations with TPA-10 Paging Adapter — Interconnection Diagram

TABLE I

Wire Sizes Required				
AWG No.	22	20	18	16
Distance	200M	300M	500M	650M
	650 ft.	1000 ft.	1600 ft.	2500 ft.

TELEPHONES

1. For wall mounting, attach the mounting bracket supplied to the wall or single outlet box with the accessory screws.

2. Hang the telephone on the bracket, press it against the bracket, and pull down to secure it.

3. For desk-top use, remove the handset hanger from the telephone.

JUNCTION BOXES

1. Remove cover of junction box.

2. Fasten junction box to wall using the screws supplied.

3. After the junction box has been wired, fasten the cover in place.

POWER SUPLY PRS-10

Mount power supply on wall using hardware supplied. Do not connect it to the AC source until all wiring is completed.

PAGING ADAPTER TPA-10 (ACCESSORY)

The paging adapter is connected between public address amplifier input and one of the telephones as shown in figures 2 and 4.

TALK-BACK ADAPTER TBR-10 and RELAY RY-20 (ACCESSORIES)

Refer to figures 6 and 7 for connection data.

WIRING

Refer to Figures 2 through 9, and select the wiring diagrams(s) suitable to the desired type of installation. If it is necessary to use more than one multi-conductor cable, identify cables at each end before installing them. Begin cable connections at the Station 1 junction box and progress station-by-station. Leave about 1.5 feet extra cable at each junction box for reserve in case of broken wires.

After completing the installation, plug the power supply AC cord into a 120V, 60 Hz source and verify that the indicator light is on. Fill in the directory name card for each telephone.

OPERATION

CALLING

1. Make certain that the red "IN USE" indicator is off.
2. Lift the handset, and press the selector button for the station you are calling. To make a conference call, press up to four selector buttons. A call tone will be heard at the called station(s) and a sidetone will be heard in the originating handset (With TIS-1, push "C" button).
3. When your party answers, proceed with your conversation.
4. Replace the handset in its cradle when the conversation is completed.

RECEIVING A CALL

1. When call tone sounds, lift handset and reply.
2. Replace handset when finished.

PAGING

1. Make certain that the red "IN USE" indicator is off.
2. Lift handset, and keep the page (P) button depressed while speaking into the handset.
3. The person paged can reply via any other phone in system. The person paging releases his page button to hear the response.
4. Replace handsets when finished.

PAGING WITH LOUDSPEAKER TALK-BACK

1. Make certain the red "IN USE" indicator is off.
2. Lift handset, and depress and release the select button which has been assigned to this function.
3. Depress the page (P) button to speak, and release to hear a reply.
4. Replace handset upon completion.

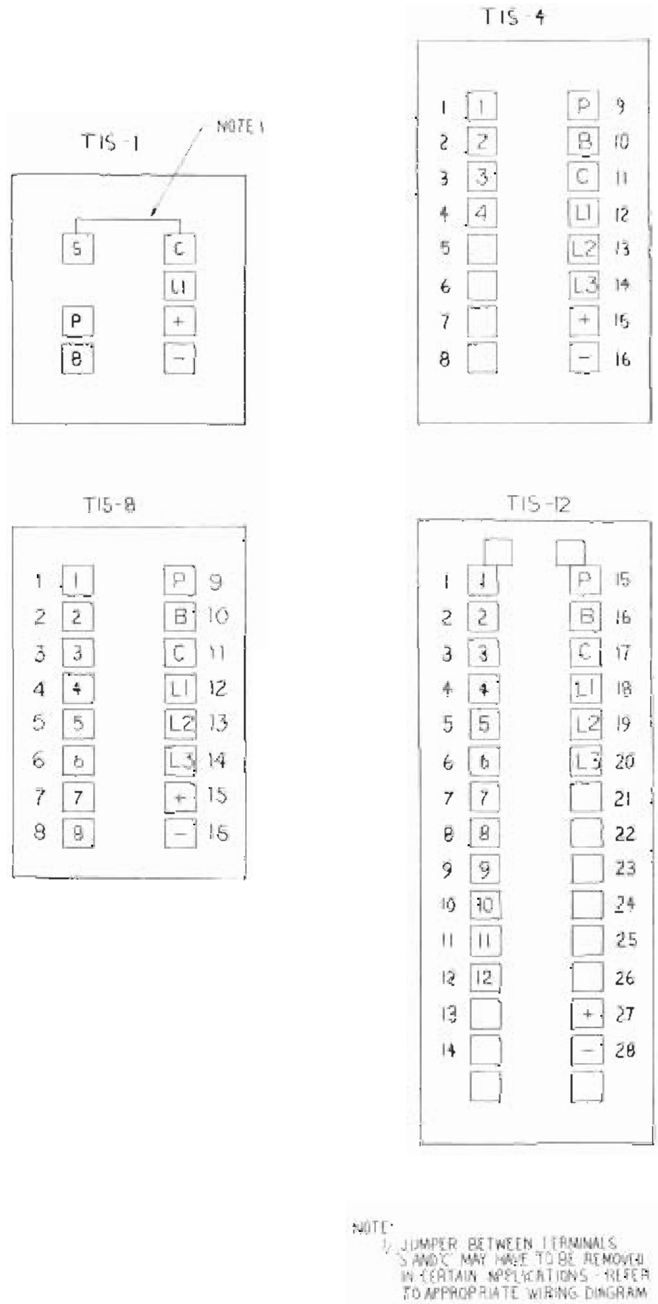


Figure 7 — Junction Block — Layout Diagram

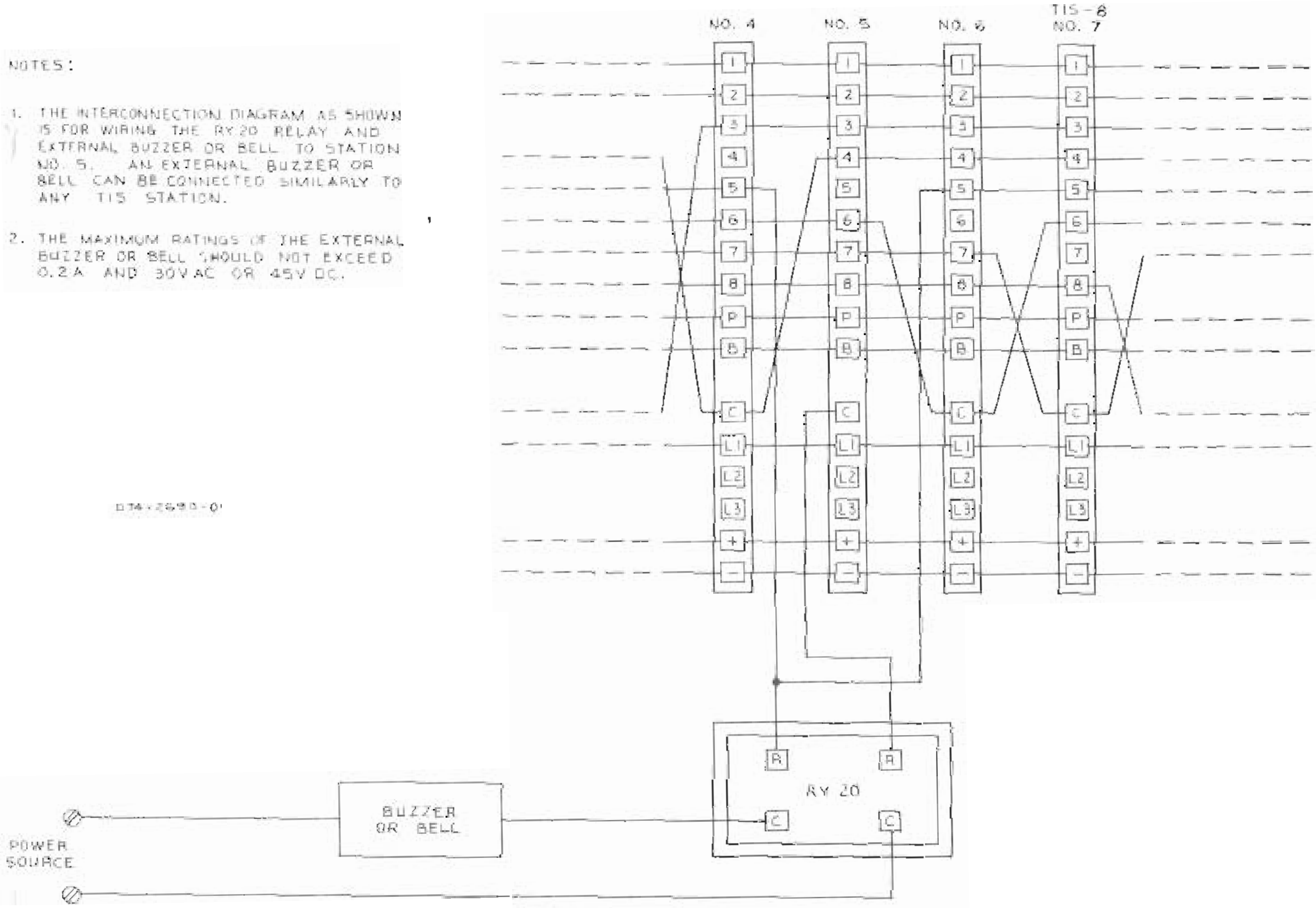


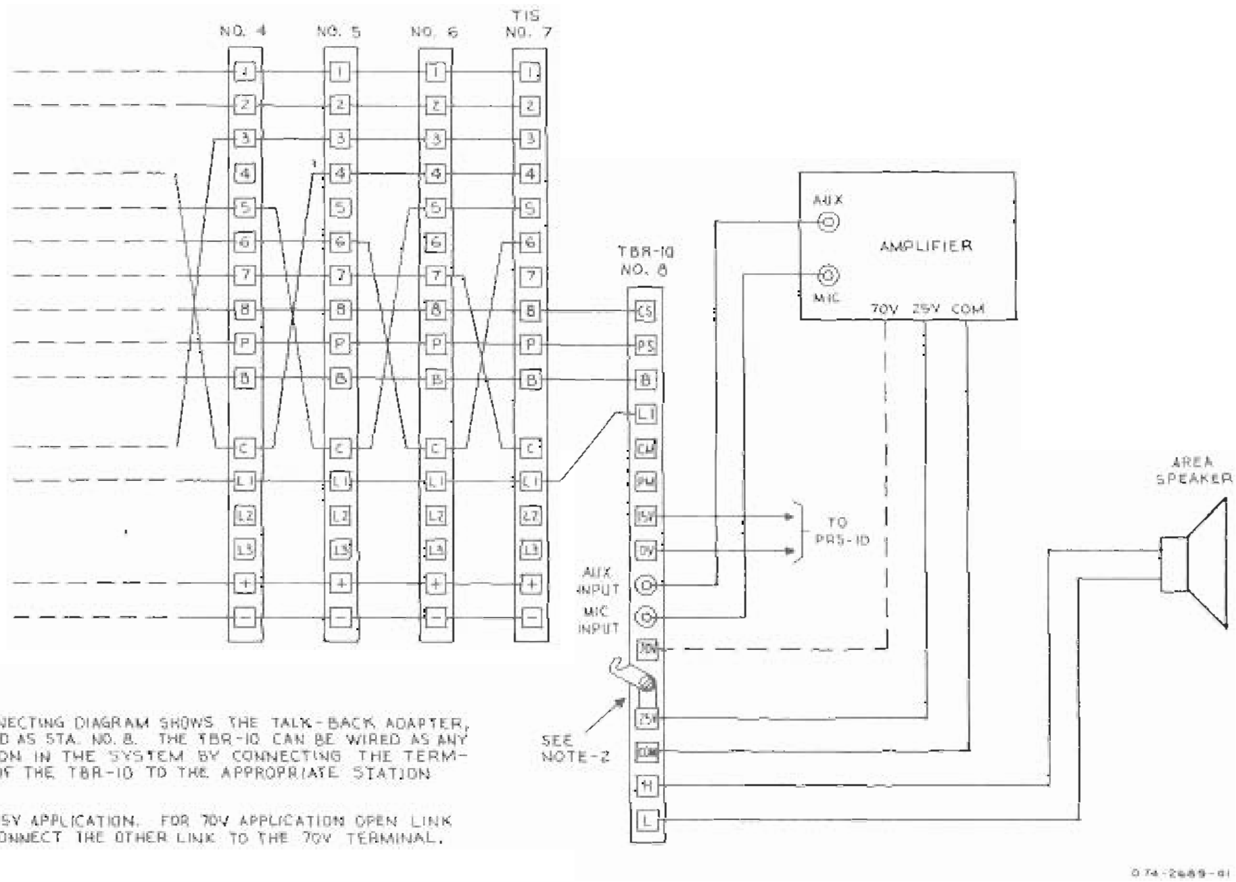
Figure 8 — Loud Ring Relay RY-20 — Connection Diagram

ACCESSORY EQUIPMENT

Name	Bogen Model No.	Function
Paging Adapter	TPA-10	Provides for paging through a public address amplifier with muting of background music.
Talk-Back Adapter	TBR-10	Paging and talk back from 1 or 2 pre-selected speakers in P.A. system (no call-in).
Relay	RY-20	Switch for loud-ring bell or buzzer.
Long Coiled Cord	HC-10	Used where extra handset distance is desired.
Cable	*7SC, 12SC, 16SC, 20SC, 30SC	Telephone interconnection.

Note: *These Bogen cables are suitable for distances up to 200 meters (650 feet) between the longest separated telephones in the system. For longer cable runs, see Table 1 for wire gauge required.*

*AWG No. 22 wire used; first digit(s) denote quantity of wires.



NOTES:

1. THIS INTERCONNECTING DIAGRAM SHOWS THE TALK-BACK ADAPTER, TBR-10, WIRED AS STA. NO. 8. THE TBR-10 CAN BE WIRED AS ANY OTHER STATION IN THE SYSTEM BY CONNECTING THE TERMINAL "CS" OF THE TBR-10 TO THE APPROPRIATE STATION LINE.
2. SHOWN FOR 25V APPLICATION. FOR 70V APPLICATION OPEN LINK SHOWN AND CONNECT THE OTHER LINK TO THE 70V TERMINAL.

Figure 9 — Talk-Back Adapter TBR-10 — Connection Diagram

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